

IN THE CLAIMS

1-14. (canceled)

15. (currently amended) A system for processing a waste stream from animal production confinements and other sources of concentrated wastes, said system comprising:

a solids/liquids separator receiving the waste stream and configured to separate the waste stream into a solid waste stream and a liquid waste stream;

a water treatment apparatus for treating the liquid waste stream;

a control system for selectively controlling an amount of moisture in the solid waste stream;

an energy conversion processor receiving the moisture controlled solid waste stream and converting the solid waste stream into an energy source; ~~and~~

a power generator configured to utilize the energy source; and

at least one second power generator, said second power generator operation controlled by a controller configured to meet an electrical load demand.

16. (original) A system according to Claim 15 further comprising one or more fuel storage tanks between said energy conversion processor and said power generator for storing fuel from said energy conversion processor.

17. (canceled)

18. (currently amended) A system according to Claim 15 wherein said first and second power generator comprises ~~generators comprise~~ one or more of an engine generator, a fuel-fired turbine, and a fuel cell.

19. (original) A system according to Claim 15 further comprising one of a shredder, a pump, and a grinding pump, receiving a solids waste stream and providing a solid waste stream to said energy conversion processor.

20. (original) A system according to Claim 15 further comprising a heat source heating the solid waste stream to said energy conversion processor.

21. (original) A system according to Claim 15 further comprising a dryer removing moisture from the solid waste stream to said energy conversion processor.

22. (currently amended) A system according to ~~Claim 15~~ Claim 21 wherein said dryer comprises a helical auger.

23. (currently amended) A system according to ~~Claim 15~~ Claim 21 wherein said dryer comprises a blower.

24. (currently amended) ~~A system according to Claim 15 wherein said solids/liquids separator comprises:~~ A system for processing a waste stream from animal production confinements and other sources of concentrated wastes, said system comprising:

a solids/liquids separator comprising:

at least one buffer tank receiving the waste stream;

at least one mechanical separator receiving the waste from said buffer tank and providing a solids waste stream and a liquid waste stream, the solid waste stream being routed to said energy conversion processor; and

~~at least one a first settling tank receiving liquids from said mechanical separator, liquids from said settling tank being routed to said wastewater treatment apparatus, solids from said settling tank being routed to said buffer tank~~ separating the waste stream into a solid waste stream and a liquid waste stream;

a water treatment apparatus for treating the liquid waste stream;

a control system for selectively controlling an amount of moisture in the solid waste stream;

an energy conversion processor receiving the moisture controlled solid waste stream and converting the solid waste stream into an energy source; and

a power generator configured to utilize the energy source.

25. (original) A system according to Claim 24 further comprising:

a heat source;

a dryer in the solids waste stream to said energy conversion processor using said heat source to remove an amount of moisture from the solids waste stream;

a moisture sensor sensing an amount of moisture in the waste stream to said energy conversion processor; and

a moisture controller configured to control said heater and said dryer to control an amount of moisture in the waste stream to said energy conversion processor.

26. (currently amended) A system according to ~~Claim 15~~ Claim 24 wherein said ~~solids/liquids separator comprises:~~

~~at least one buffer tank receiving the waste stream;~~

~~at least one mechanical separator receiving the waste from said buffer tank and providing a solids waste stream and a liquid waste stream, the solid waste stream being routed to said energy conversion processor;~~

~~at least one settling tank receiving liquids from said mechanical separator, the liquids from said first settling tank being~~ are ~~are~~ routed to said wastewater treatment apparatus; ~~and, said solids/liquids separator further comprising a valve routing a portion of the solids from said first settling tank being routed to~~ to said buffer tank, and a portion of the solids to said energy conversion processor.

27. (original) A system according to Claim 26 further comprising:

a moisture sensor sensing an amount of moisture in the solids waste stream to said energy conversion processor; and

a moisture controller configured to control said valve to control an amount of moisture in the solids waste stream to said energy conversion processor.

28. (currently amended) A system according to ~~Claim 15~~ Claim 24 wherein said solids/liquids separator further comprises:

~~a buffer tank receiving the waste stream;~~

~~a first mechanical separator receiving the waste from said buffer tank and providing a solids waste stream and a liquid waste stream, the solid waste stream being routed to said energy conversion processor;~~

a second mechanical separator receiving the liquid waste stream from said first mechanical separator and providing a solids waste stream and a liquid waste stream, the solid waste stream being routed to said energy conversion processor;

a said first settling tank receiving the liquid waste stream from said second mechanical separator, liquids from said first settling tank being routed to said wastewater treatment apparatus; and

a valve routing a portion of the solids from said first settling tank ~~being routed~~ to said buffer tank, and a portion of the solids to said energy conversion processor.

29. (original) A system according to Claim 28 further comprising:

a moisture sensor sensing an amount of moisture in the solids waste stream to said energy conversion processor; and

a moisture controller configured to control said valve to control an amount of moisture in the solids waste stream to said energy conversion processor.

30. (currently amended) A system according to ~~Claim 15~~ Claim 24 wherein said solids/liquids separator further comprises:

~~a buffer tank receiving the waste stream;~~

~~a mechanical separator receiving the waste from said buffer tank and providing a solids waste stream and a liquid waste stream, the solid waste stream being routed to said energy conversion processor;~~

~~a first settling tank receiving the liquid waste stream from said mechanical separator and providing a solids waste stream and a liquid waste stream, the solid waste stream being routed to said energy conversion processor;~~

~~a valve routing a portion of the solids from said first settling tank being routed to said buffer tank, and a portion of the solids being routed to said energy conversion processor.~~

~~a second settling tank receiving the liquid waste stream from said first settling tank, liquids from said second settling tank being routed to said wastewater treatment apparatus; and~~

~~a second valve routing a portion of the solids from said second settling tank being routed to said buffer tank, and a portion of the solids to said energy conversion processor.~~

31. (original) A system according to Claim 30 further comprising:

~~a moisture sensor sensing an amount of moisture in the solids waste stream to said energy conversion processor; and~~

~~a moisture controller configured to control said first valve and said second valve to control an amount of moisture in the solids waste stream to said energy conversion processor.~~

32. (original) A system according to Claim 15 comprising at least one of:

~~at least one heat exchanger configured to heat the solid waste stream via heat recovered from cooling fluid of said power generator;~~

at least one heat exchanger configured to heat the solid waste stream via heat recovered from one or more of steam and exhaust gases available from said energy conversion processor; and

at least one heat exchanger configured to heat the solid waste stream via a heat transfer medium circulated therethrough, the heat transfer medium heated from hot fuel from said energy conversion processor.

33. (currently amended) ~~A system according to Claim 15 comprising~~ A system for processing a waste stream from animal production confinements and other sources of concentrated wastes, said system comprising:

a solids/liquids separator receiving the waste stream and configured to separate the waste stream into a solid waste stream and a liquid waste stream;

a water treatment apparatus for treating the liquid waste stream;

a control system for selectively controlling an amount of moisture in the solid waste stream;

an energy conversion processor receiving the moisture controlled solid waste stream and converting the solid waste stream into an energy source;

a power generator configured to utilize the energy source; and

a gas separator configured to separate a portion of the exhaust gas from said power generator for delivery to said energy conversion processor.

34. (original) A system according to Claim 33 wherein said gas separator is a membrane separation device to concentrate the amount of a single gas for delivery to said energy conversion processor.

35. (original) A system according to Claim 33 wherein said gas separator utilizes one or more of pressure-swing absorption, vacuum swing absorption, chemical separation, and catalytic separation.

36. (original) A system according to Claim 15 wherein heat from said power generator is applied to said energy conversion processor by one or more of impedance and induction, in one or more distinct zones of heating.

37. (currently amended) A system according to ~~Claim 36~~ Claim 15 wherein said energy conversion processor comprises a jacketed pipe, wherein heat from said power generator is applied as one of heated fluid or heated gas to said jacketed pipe to maintain desired temperature setpoints.

38. (new) A system according to Claim 24 further comprising one or more fuel storage tanks between said energy conversion processor and said power generator for storing fuel from said energy conversion processor.

39. (new) A system according to Claim 24 wherein said power generator comprises one or more of an engine generator, a fuel-fired turbine, and a fuel cell.

40. (new) A system according to Claim 24 further comprising one of a shredder, a pump, and a grinding pump, receiving a solids waste stream and providing a solid waste stream to said energy conversion processor.

41. (new) A system according to Claim 24 further comprising a heat source heating the solid waste stream to said energy conversion processor.

42. (new) A system according to Claim 24 further comprising a dryer removing moisture from the solid waste stream to said energy conversion processor, wherein said dryer comprises at least one of a helical auger and a blower.

43. (new) A system according to Claim 24 wherein heat from said power generator is applied to said energy conversion processor by one or more of impedance and induction, in one or more distinct zones of heating.

44. (new) A system according to Claim 24 wherein said energy conversion processor comprises a jacketed pipe, wherein heat from said power generator is applied as one of heated fluid or heated gas to said jacketed pipe to maintain desired temperature setpoints.

45. (new) A system according to Claim 33 further comprising one or more fuel storage tanks between said energy conversion processor and said power generator for storing fuel from said energy conversion processor.

46. (new) A system according to Claim 33 wherein said power generator comprises one or more of an engine generator, a fuel-fired turbine, and a fuel cell.

47. (new) A system according to Claim 33 further comprising one of a shredder, a pump, and a grinding pump, receiving a solids waste stream and providing a solid waste stream to said energy conversion processor.

48. (new) A system according to Claim 33 further comprising a heat source heating the solid waste stream to said energy conversion processor.

49. (new) A system according to Claim 33 further comprising a dryer removing moisture from the solid waste stream to said energy conversion processor, wherein said dryer comprises at least one of a helical auger and a blower.

50. (new) A system according to Claim 33 wherein heat from said power generator is applied to said energy conversion processor by one or more of impedance and induction, in one or more distinct zones of heating.

51. (new) A system according to Claim 33 wherein said energy conversion processor comprises a jacketed pipe, wherein heat from said power generator is applied as one of heated fluid or heated gas to said jacketed pipe to maintain desired temperature setpoints.